

Appl. No. 10/622,901
Reply to Office Action of October 12, 2004

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An inkjet recording method comprising:
ejecting ink containing pigment, water and an organic solvent onto an image receiving medium, wherein the image receiving medium comprises;
a support member having a non-solvent-permeable resin layer, and
an ink image receiving layer, which is provided on the support member, having laminated layers of a solvent absorbing layer containing inorganic fine particles and a binder, and a surface portion layer containing resin fine particles, an inorganic pigment and a binder, wherein a weight ratio of the inorganic pigment to the resin fine particles (inorganic pigment/resin fine particles) is from 3/7 to 7/3; and

Appl. No. 10/622,901
Reply to Office Action of October 12, 2004

conducting a heating and pressing treatment onto the image receiving medium by a heating and pressing device, wherein the heating and pressing treatment satisfies conditions of following expressions (1) and (2) at the same time,

$$\text{expression (1)}: (T - T_g) \times t > 2$$

$$\text{expression (2)}: (T - T_m) \times t < 3$$

wherein, T represents a surface temperature ($^{\circ}\text{C}$) of a member of the heating and pressing device, which is arranged on the ink image receiving layer side of at the position where heating and pressing treatment is conducted; T_g represents a glass transition temperature of the resin fine particles ($^{\circ}\text{C}$); t represents a processing time (second) of the heating and pressing treatment; and T_m represents a melting temperature ($^{\circ}\text{C}$) of the non-solvent-permeable resin layer.

2. (Original) The inkjet recording method of claim 1, wherein the heating and pressing treatment satisfies conditions of the following expressions (3) and (4) at the same time,

Expression (3):

$$(T - T_g) \times t > 6$$

Appl. No. 10/623,901
Reply to Office Action of October 12, 2004

Expression (4):

$$(T - T_M) \times t < 3$$

wherein, T, T_G , T_M , and t represent the same meanings as in the expressions (1) and (2).

3. (Original) The inkjet recording method of claim 1, wherein a thickness of the surface portion layer is from 3 to 10 μm .

4. (Original) The inkjet recording method of claim 1, wherein the total thickness of the solvent absorbing layer is from 25 to 40 μm .

Claim 5 (Cancelled).

6. (Original) The inkjet recording method of claim 1, wherein a porosity of the ink image receiving layer is from 30 to 70%.

7. (Original) The inkjet recording method of claim 1, wherein the support member is comprised of paper and the non-solvent-permeable resin layer, and a melting point of the non-solvent-permeable resin layer is from 100 to 180°C.

Appl. No. 10/622,901
Reply to Office Action of October 12, 2004

8. (Original) The inkjet recording method of claim 1, wherein at least one kind of resin included in the non-solvent-permeable resin layer is polyolefin resin.

9. (Original) The inkjet recording method of claim 1, wherein a glass transition temperature of the resin fine particles is from 50 to 180°C.

10. (Currently Amended) The inkjet recording method of claim 1, wherein a mean particle diameter of the resin fine particles is from 50 to 500 $[\mu\text{m}]$ nm.

11. (Original) The inkjet recording method of claim 1, wherein a pressure of the heating and pressing device is not less than 0.6 M Pa.

12. (Currently Amended) An inkjet recording apparatus comprising:

a recording head for ejecting ink containing pigment, water and an organic solvent onto an image receiving medium, wherein the image receiving medium comprises;

Appl. No. 10/622,901
Reply to Office Action of October 12, 2004

a support member having a non-solvent-permeable resin layer,
and

[[a]] an ink image receiving layer, which is provided on the support member, having laminated layers of a solvent absorbing layer containing inorganic fine particles and a binder, and a surface portion layer containing resin fine particles, an inorganic pigment and a binder, wherein a weight ratio of the inorganic pigment to the resin fine particles (inorganic pigment/resin fine particles) is from 3/7 to 7/3; and

a heating and pressing device for conducting a heating and pressing treatment onto the image receiving medium, and the heating and pressing device comprises a heat roller and a pressure roller for forming a nip where the image recording medium is pressed,

wherein the heating and pressing treatment satisfies conditions of following expressions (1) and (2) at the same time, expression (1):

$$(T - T_c) \times t > 2$$

expression (2):

$$(T - T_M) \times t < 3$$

wherein, T represents a surface temperature ($^{\circ}$ C) of a member of

Appl. No. 10/622,901
Reply to Office Action of October 12, 2004

the heating and pressing device, which is arranged on the ink image receiving layer side of at the position where heating and pressing treatment is conducted; T_g represents a glass transition temperature of said resin fine particles ($^{\circ}$ C); t represents a processing time (second) of the heating and pressing treatment; and T_m represents a melting temperature ($^{\circ}$ C) of the non-solvent-permeable resin layer.

13. (Original) The inkjet recording apparatus of claim 12, wherein the heating and pressing treatment satisfies conditions of the following expressions (3) and (4) at the same time,

$$\text{expression (3)}: (T - T_g) \times t > 6$$

$$\text{expression (4)}: (T - T_m) \times t < 3$$

wherein, T, T_g , T_m , and t represent the same meanings as in the expressions (1) and (2).

14. (Original) The inkjet recording apparatus of claim 12, further comprising an endless belt which houses the heat roller.

15. (Original) The inkjet recording apparatus of claim 12, wherein the surface of the heat roller is covered with silicone resin.

Appl. No. 10/622,901
Reply to Office Action of October 12, 2004

16. (Original) The inkjet recording apparatus of claim 14,
wherein the surface of the endless belt is covered with silicone
resin.

17. (Original) The inkjet recording apparatus of claim 12,
wherein the heat roller has a surface roughness of not more than
80 nm, and is brought in contact with the ink image receiving
layer side of an image receiving medium.

18. (Original) The inkjet recording apparatus of claim 14,
wherein the endless belt has a surface roughness of not more than
80 nm, and is brought in contact with the ink image receiving
layer side of the image receiving medium.